



State of Utah

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DIVISION OF WATER QUALITY
Walter L. Baker, P.E.
Director

M/03510009
Incoming

APR 23 2015

CERTIFIED MAIL

(Return Receipt Requested)

Mr. Steve Schnoor
Director – Land, Water and Energy
Rio Tinto Kennecott
4700 Daybreak Parkway
South Jordan, Utah 84095

Dear Mr. Schnoor:

Subject: **Letter of Violation and Warning** – Failure of the Best Available Technology (BAT) Barneys Canyon Soil Contamination, Ground Water Discharge Permit UGW350001

The Division of Water Quality (DWQ) reviewed the *Request for Approval to Construct Barneys Canyon Mine Heap Leach Pad #5 Buttress* dated March 19, 2015. Attached to the above-referenced document is a characterization report documenting soil with elevated concentrations of arsenic and thallium present throughout the Barneys Canyon site. Given that each of the five leach pads were constructed over a high density polyethylene (HDPE) liner designed to contain all material placed on the pads, a failure of BAT has occurred and Rio Tinto Kennecott (RTK), on behalf of Barneys Canyon Mining Company, is in violation of permit conditions. Waste has been placed in a location where there is probable cause to believe it will cause pollution which is a violation of the provisions under UCA 19-5-107. This contaminated soil represents an ongoing potential source of ground water contamination. As a result, additional soil characterization activities are necessary and a soil remediation plan must be presented for DWQ review and approval before buttress construction activities will be considered.

Required Actions

In lieu of further enforcement action by DWQ, within 45 days of the date of this letter RTK, on behalf of Barneys Canyon Mining Company, shall respond in writing to each of the following comments in an effort to regain compliance:

Ground Water Monitoring

Add arsenic and thallium to the on-going analyte list for all future ground water monitoring well sampling under Permit UGW350001 beginning with the next sampling event.

Soil Characterization/Remediation Plan

1. Present justification for the analyte list (and methods) used to characterize soil at the site and demonstrate why arsenic and thallium are the appropriate contaminants of concern. What, if any, contaminants that are not detectable using XRF screening were evaluated, and why or why not?
2. Describe how the soil characterization sample locations were determined and why they are representative of site conditions.
3. Many of the SPLP soil characterization results for arsenic and thallium presented in Table 5-2 exceed the Ground Water Quality Standards in Table 1 of R317-6-2, representing a potential source of ground water contamination. Propose a site-wide soil remediation plan and schedule that will be protective of ground water. Include contaminants of concern, clean-up levels based both on ground water protection criteria as well as human health and ecologic risk assessment criteria.
4. Describe the land use scenarios used to establish soil clean-up levels. Will the proposed scenario(s) require an institutional control agreement under State or Federal authority?
5. Demonstrate that proposed soil remedies are not only protective of ground water, but also satisfy other applicable State and Federal regulations.

Finalize Clay Hollow Post-Removal Report

Given that Leach Pad #5 is the source of soil contamination remediated in the Clay Hollow drainage during 2014, provide a written response to comments issued by DWQ/DERR in a letter dated March 23, 2015 regarding the Clay Hollow Post-Removal Report. Resolving many of the comments provided during the Clay Hollow project (such as laboratory QA/QC requirements) will be directly applicable to soil characterization and remediation activities moving forward at the Barney's site.

Engineering and Construction Specifications

As stated above, until a site-wide soil remediation strategy has been approved by all appropriate regulatory agencies, it is premature to initiate buttress construction/leach pad capping activities. However, prior to approving those activities, DWQ will require the following:

1. Describe the source and specifications of the material that will be used to construct the buttress.
2. Describe compaction specifications for each lift of the buttress.
3. Describe the source and specifications of the material that will be used to construct the cap.
4. Describe compaction specifications for each lift of the cap.
5. If capping contaminated soil in place is a proposed soil remediation remedy, present hydraulic conductivity specifications for buttress and/or leach pad cap construction to demonstrate that the cover will be protective of ground water.
6. Describe how the material borrow areas will be managed during construction and reclaimed following construction.
7. Present a timeline and schedule for constructing a buttress around each of the four sides of leach pad 5 as well as placement of the cap. Explain if buttress and cap construction will be concurrent activities or constructed in sequence (i.e., will capping above a completed buttress section begin on one side prior to completing buttress construction on another side).
8. Describe buttress tie-in techniques when two sections of the buttress come together.
9. Describe the difference between non-compacted clean fill used for final landform design and the heap leach pad cover.

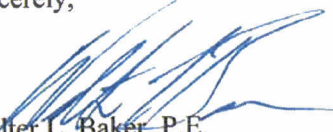
Project Monitoring and Reporting

1. Explain how erosion of spent ore onto buttress and/or cap material will be prevented and monitored during construction.
2. Explain the process that led to waste rock being spilled beyond the designed containment for each leach pad and how this will be prevented/monitored/contained during the period between now and the capping of each leach pad.

Present a reporting schedule that will keep DWQ informed of ongoing construction activities from project start through completion, including topics such as (but not limited to), design changes, schedule changes, construction QA/QC results, contaminant sample results, final as-builts, etc..

Thank you for your cooperation. Please contact Brian Hamos at (801) 536-4384 or bhamos@utah.gov if you have any questions regarding this matter.

Sincerely,



Walter L. Baker, P.E.
Director

WLB:DJH:BDH:mc

cc: Leslie Heppler, DOGM (via e-mail)
Douglas Bacon, DERR (via e-mail)
Kerri Fiedler, EPA Region 8 (via e-mail)
John Hoggan, Salt Lake County Health Department (via e-mail)

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